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(71)出願人 596160883

ユニ電子株式会社

東京都新宿区西新宿2-6-1 新宿住友

ビル18階

(72)発明者 水澤 重一

東京都武蔵村山市大南3-128-15

(74)代理人 弁理士 大内 俊治

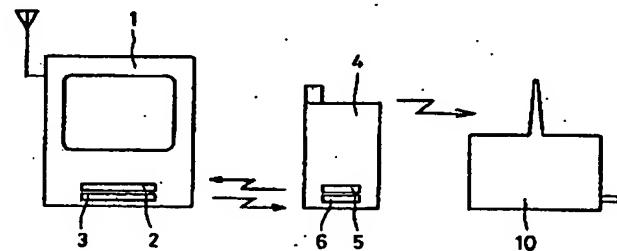
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(54)【発明の名称】 無線送受信方式

(57)【要約】

【課題】 携帯電話機を用いて双方向通信を容易にする。

【解決手段】 リモコン信号の受信部2とデータ信号を光変調する発信部3とを備えたAV機器1と、リモコン信号の送信部5とAV機器1からの光変調されたデータ信号を光復調してデータ信号を抽出する受信部6とを備えた携帯電話機4との相互間で信号の授受を行い、携帯電話機4で光復調して抽出したデータ信号を通常の電話回路により親機10を介して上流に転送する。



【特許請求の範囲】

【請求項1】 リモコン信号の受信部とデータ信号を光変調する発信部とを備えたAV機器と、リモコン信号の発信部とAV機器からのデータを含む光信号を光復調してデータ信号を抽出する受信部とを備えた携帯電話機とを有し、AV機器と携帯電話機との相互間で信号の授受を行い、携帯電話機において抽出したデータ信号を通常の電話回線により上流に転送することを特徴とした無線送受信方式。

【請求項2】 リモコン信号の受信部とデータ信号を光変調する発信部とを備えたAV機器と、リモコン信号の発信部とAV機器からのデータを光変調してデータ信号を抽出する受信部とを備えたりモコン送受信機と、リモコン送受信機に接続可能であって、リモコン送受信機よりのデータ信号を受信する携帯電話機とを有し、AV機器とリモコン送受信機との相互間で信号の授受を行い、リモコン送受信機におけるデータ信号を携帯電話機により送信して通常の電話回線により上流に転送することを特徴とする無線送受信方式。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本願は、AV機器と利用者との間で光信号の授受を行い、その光信号を携帯電話機を介して通常の電話回線により上流に転送する無線送受信方式に関する。

【0002】

【従来の技術】 従来AV機器を介して行なう双方向データ通信方式として有線による方法と無線による方法があり、前者の場合は、特に家庭及び事務所等において備付けのAV機器例えばテレビジョンと電話機とを用いてデータの転送を行い、また後者の場合は、AV機器とその近接場所に高周波の送受信機の子機を配置し、その親機で送受信して上流にデータを転送する方式であった。

【0003】

【発明が解決しようとする課題】 ところが、上記した有線により送受信を行なう方法の場合、AV機器と電話機との結線に関しては、それらが設置される場所が異なる場合が多く、そのためこれらをケーブル等で結線する作業が面倒であると共に、美観を損ないかつ電送性能が低下するという不都合を有し、また無線により送受信を行なう方法においては、AV機器と送受信機間の信号による相互干渉妨害が発生し易く、機器の誤動作の原因をもたらし、さらに、親機と子機間の送受信プロトコールや親機の切り替え制御の処理に複雑なシステム処理を必要としそれぞれコスト高となると共に動作の安定性を欠くなどの不都合があった。そこで本願発明は上記した従来のものの不都合を解消することを目的としたものである。

【0004】

【課題を解決するための手段】 本願は上記の目的を達成するために、リモコン信号の受信部とデータ信号を光変

調する発信部とを備えたAV機器と、リモコン信号の発信部とAV機器からのデータを含む光信号を光復調してデータ信号を抽出する受信部とを備えた携帯電話機とを有し、AV機器と携帯電話機との相互間で信号の授受を行い、携帯電話機において抽出したデータ信号を通常の電話回線により上流に転送することまたはリモコン信号の受信部とデータ信号を光変調する発信部とを備えたAV機器と、リモコン信号の発信部とAV機器からのデータを光変調してデータ信号を抽出する受信部とを備えたリモコン送受信機と、リモコン送受信機に接続可能であって、リモコン送受信機よりのデータ信号を受信する携帯電話機とを有し、AV機器とリモコン送受信機との相互間で信号の授受を行い、リモコン送受信機におけるデータ信号を携帯電話機により送信して通常の電話回線により上流に転送することを特徴とするものである。

【0005】

【発明の実施の形態】 以下図面にもとづいて、本願発明の実施例を詳述する。図1、2は携帯電話機としてPHS電話機を用いた場合の総体図を示しており、1はAV

機器であって、その内部に赤外線によるリモコン信号を受ける受信部2とAV機器1により生成されたデータをLEDで光変調してそのデータ信号を送出する送信部3とが装備されている。4は公知のPHS電話機であって、図1は公知のPHS電話機4に、赤外線によるリモコン信号を送信する送信部5と、AV機器1の送信部3から送出されるデータ信号を光復調してデータ信号を抽出する受信部6を設けた構成の場合を、図2は上記した送信部5と受信部6とを内蔵して成るリモコン送受信機7を公知のPHS電話機4に対し短尺なコード8により接続してデータ信号を送出する構成の場合の実施例をそれぞれ示している。

【0006】 具体的には、PHS電話機4は、図3で示すように、その操作面上に通常の数字などの操作用釦4aのほかに、例えば応答などに用いる専用の操作用釦9を備えると共に、内部には、操作用釦9の操作により応答のリモコン信号を出力する送信部5と、AV機器1の送信部2から出力される光変調されたデータ信号を受信して、このデータ信号を光復調して抽出したデータ信号を通常の電話回線に転送するための受信部6が装備されている。

【0007】 また前記リモコン送受信機7は、その表面に通常のチャンネル切換用釦7aのほかに、例えば応答などに用いる専用の操作用釦9とこの釦9の操作によって赤外線により応答のリモコン信号を出力する発信部5と、AV機器1の送信部2から出力される光変調されたデータ信号を光復調してデータ信号を抽出し、これをPHS電話機4にコード8を介して送出するための受信部6が備えられている。

【0008】 しかして、使用に際しては、放送電波によりAV機器1に写し出される画像を見ながら例えれば通信

販売会社から提供される情報を通じて特定の商品の購入を行なう場合において、購入しようとする商品の画像が写し出されたとき、PHS電話機4に備えられまたはリモコン送受信機7に備えられている操作用鉗9を操作する。

【0009】するとその応答のリモコン信号はAV機器1の受信部2に送出され、これによりAV機器1で生成されたデータ信号は光変調されて送信部3から赤外線により伝送され、これがPHS電話機4またはリモコン送受信機7の受信部6に入力する。即ちAV機器1とPHS電話機4またはリモコン送受信機7との間で信号の授受が行なわれる。

【0010】そして、受信部6に入力したデータ信号は、光復調されてAV機器1により生成したデータ信号が抽出され、これが図1においてはPHS電話機4から通信信号として発信され、またはコード8を介してPHS電話機4に入力して該PHS電話機4から通信信号として発信され、この信号は通常の電話回路によりPHS親機10を介して上流に転送され、図示しないが例えば通信販売会社のデータ入力回路に登録される。

【0011】なお上記においてAV機器としてテレビジョン受信機、オウディオ、カラオケ受像機或いはゲーム機器が含まれ、また上記実施例は、AV機器によって商品を購入する場合の使用態様について述べたが、アンケートに対する回答の場合や世論調査に対する応答の場合

なども使用可能である。

【0012】

【発明の効果】以上のように本願発明によれば、AV機器と携帯電話機間で信号の授受を行なう構成であるので、従来のようにAV機器と電話機との間でケーブル等の配線を行なう必要はないし、またAV機器と送受信機間での信号による相互干渉妨害の懼れもなく使用に極めて便利であると共に、モデムを別途使用する必要ないので、経済的に有利であるなどの利点を有する。

10 【図面の簡単な説明】

【図1】本願方式の総体図

【図2】本願方式の他の総体図

【図3】携帯電話機の平面図

【図4】携帯電話機にリモコン送受信機を接続した状態の平面図

【符号の説明】

1 AV機器

2, 6 受信部

3, 5 送信部

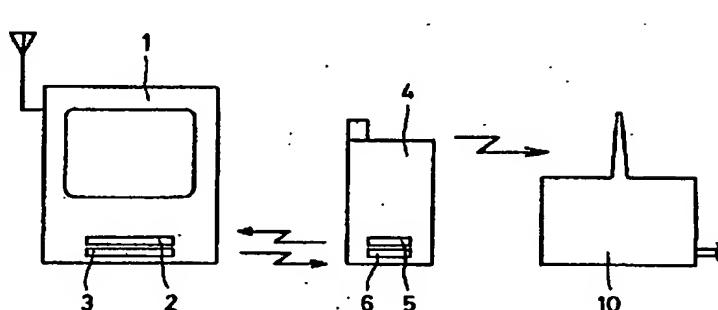
20 4 PHS電話機

7 リモコン送受信機

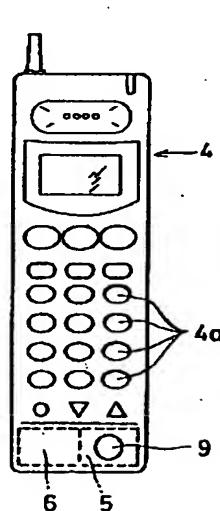
8 コード

9 操作用鉗

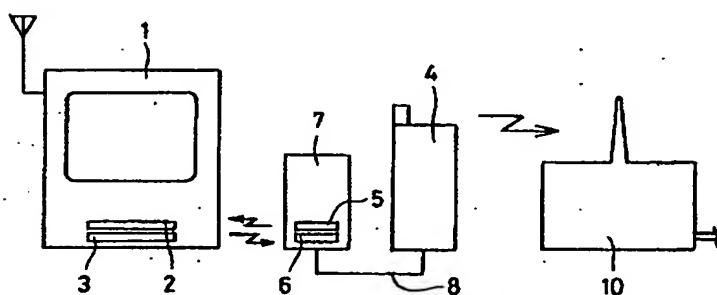
10 PHS電話機の親機



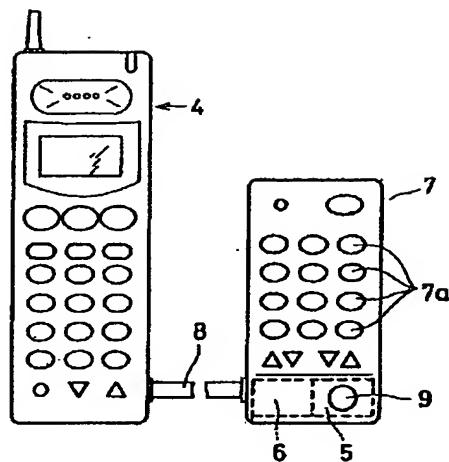
【図1】



【図3】



【図4】



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TITLE Wireless Transmission/Reception Method
APPLICATION NO. H8-295928
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APPLICANT(S) Uni Electronics Co., Ltd.
INVENTOR(S) Shigekazu MIZUSAWA
PATENT ATTORNEY Toshiharu OHUCHI

ABSTRACT

OBJECT To facilitate two-way communication with the use of a portable telephone.

MEANS OF SOLUTION To mutually send and receive signals between AV equipment 1 that is equipped with a remote control signal receiving part 2 and a sending part 3 that optically modulates data signals, and a portable telephone 4 that is equipped with a remote control signal sending part 5 and a receiving part 6 that optically demodulates optically-modulated data signals from AV equipment 1 to extract data signals, and to transfer data signals that are optically demodulated and extracted by a portable telephone 4 upstream over an ordinary telephone line through a base unit 10.

[Claims]

[Claim 1] A method of wireless transmission, characterized in that it comprises a piece of AV equipment that is equipped with a remote control signal receiving part and a sending part that optically modulates data signals, and a portable telephone that is equipped with a remote control signal sending part and a receiving part that optically demodulates optical signals, including data from the AV equipment, and extracts data signals, and that signals are mutually sent and received between the AV equipment and the portable telephone, and that data signals that are extracted by the portable telephone are transferred upstream over an ordinary telephone line.

[Claim 2] A method of wireless transmission, characterized in that it comprises a piece of AV equipment that is equipped with a remote control signal receiving part and a sending part that optically modulates data signals, and a remote control transmitter/receiver that is equipped with a remote control signal sending part and a receiving part that optically modulates data from the AV equipment and extracts data signals, and a portable telephone that can be linked to the remote control transmitter/receiver and receives data signals from the remote control transmitter/receiver, and that signals are mutually sent and received between the AV equipment and the remote control transmitter/receiver, and that data signals of the remote control transmitter/receiver are transmitted by the portable telephone for transfer upstream over an ordinary telephone line.

[Detailed Description of the Design]

[0001]

[The Technical Field to which the Invention Belongs]

This invention relates to a method of wireless signal transmission and reception whereby optic signals are sent and received between a piece of AV equipment and a user, and the optic signals are transferred upstream over an ordinary telephone line through a portable telephone.

[0002]

[Prior Art] Conventional methods of two-way data communication through AV equipment consist of wire methods and wireless methods. With the former, data are transferred using AV equipment, such as TV sets and telephones, that are placed at homes or in offices, whereas with the latter, AV equipment is installed together with a hand-held unit of a high-frequency transmitter-receiver in the vicinity of the AV equipment, and data are sent and received by the base unit of the transmitter-receiver for transfer upstream.

[0003]

[Problems that the Invention Aims to Solve] However, the aforesaid wire methods of transmission and reception entail such problems as the cumbersome wiring work involved to connect AV equipment and a telephone as they are often installed in different places, as well as loss of aesthetic appearance and reduced transmission efficiency. The wireless methods of transmission and reception, on the other hand, give rise to such inconveniences as frequent cross-interference by signals between AV equipment and a transmitter-receiver, which gives rise to equipment malfunctions. Furthermore, complex system processes are required to process transmission/reception protocols between the base unit and the hand-held unit and the switch control of the base unit. All of these inconveniences result in increased cost and lack of operational stability. For these reasons, the present invention aims to eliminate the aforementioned inconveniences associated with the conventional methods.

[0004]

[Means of Solving the Problem] This invention is characterized in that it comprises a piece of AV equipment that is equipped with a remote control signal receiving part and a transmission part that optically modulates data signals, and a portable telephone equipped with a remote control signal transmission part and a reception part that optically demodulates optic signals, including data from the AV equipment, to extract data signals, and that signals are mutually sent and received between the AV equipment and the portable telephone, and that data signals of the extracted data signals by the portable telephone are transmitted upstream over an ordinary telephone line, and is characterized in that it comprises a piece of AV equipment that is equipped with a remote control signal receiving part and a sending part that optically modulates data signals, a remote control transmitter/receiver that is equipped with a remote control signal sending part and a receiving part that optically modulates data from the AV equipment and extracts data signals, and a portable telephone that can be linked to the remote control transmitter/receiver and receives data signals from the remote control transmitter/receiver, and that signals are mutually sent and received between the AV equipment and the remote control transmitter/receiver, and that data signals of the remote control transmitter/receiver are transmitted by the portable telephone for transfer upstream over an ordinary telephone line so as to achieve the aforesaid purposes of this invention.

[0005]

[Embodiment of the Invention] An example of the present invention shall be explained using figures. Figs. 1 and 2 provide diagrams of the overall system when a PHS telephone is used as a portable telephone. 1 is AV equipment, internally containing a reception part 2 that receives infrared ray remote control signals and a transmission part 3 that optically modulates with LED the data generated by AV equipment 1 and transmits the data signals. 4 is a publicly-known PHS telephone unit. Fig. 1 shows an example of a configuration wherein publicly-known PHS telephone unit 4 is equipped with a transmission part 5 that transmits infrared ray remote control signals and a reception part 6 that optically demodulates data signals that are sent from transmission part 3 of AV equipment 1 and extracts data signals. Fig. 2 shows an example of a configuration wherein a remote control transmitter/receiver 7 that internally holds aforesaid transmission part 5 and reception part 6 is connected with a publicly-known PHS telephone unit 4 with a short cord 8 for the transmission of data signals.

[0006] Specifically, on the operational panel of PHS telephone unit 4 is a button for operation 9 that is dedicated, for example, to responding, in addition to operation buttons 4a that are used to operate ordinary numbers, as Fig. 3 illustrates. Internally, it holds transmission part 5 that produces a response in the form of remote control signals when a button for operation 9 is pressed, and reception part 6 that receives optically-modulated data signals that are sent by transmission part 2 of AV equipment 1, and optically demodulates the data signals, extracts them and transfers them over an ordinary telephone line.

[0007] On the surface of aforesaid remote control transmitter-receiver 7 are ordinary channel switch buttons 7a, a dedicated button for operation 9 that is used for responding, for example, and a transmission part 5 that produces a response in the form of infrared ray remote control signals when button for operation 9 is pressed, and reception part 6 that receives optically-modulated data signals that are sent by transmission part 2 of AV equipment 1, optically demodulates them to extract data signals and transfer them through cord 8 to PHS telephone unit 4.

[0008] When using the system, such as when making a purchase of a specific product through information that is offered by a mail order house, button for operation 9 on either PHS telephone unit 4 or remote control transmitter-receiver 7 is operated when an image of a product that is desired to be purchased comes on screen while images that are projected on AV equipment 1 by broadcasting waves are being viewed.

[0009] The remote control signals for the response then are sent to reception part 2 of AV equipment 1. Data signals that are produced by AV equipment 1 as the result of this step are optically modulated and transmitted from transmission part 3 in the form of infrared ray, and enters reception part 6 of either PHS telephone unit 4 or remote control transmitter-receiver 7. In other words, signals are sent and received between AV equipment 1 and PHS telephone unit 4 or remote control transmitter-receiver 7.

[0010] Data signals that enter reception part 6 are optically demodulated, and data signals that were produced by AV equipment 1 are extracted and sent as communication signals from PHS telephone unit 4 in Fig. 1 or entered in PHS telephone unit 4 through cord 8 and sent as communication signals by said PHS telephone unit 4. These signals are transferred upstream through PHS base unit 10 over an ordinary telephone line, and registered in the data input circuit, for instance, of a mail order house (not illustrated).

[0011] In the description provided above, AV equipment can include television receivers, audio equipment, karaoke receivers and game machines. The example provided herein above described the mode of use that involved a product purchase with the use of AV equipment. However, the system can also be used to respond to questionnaires and opinion surveys.

[0012]

[Effects of the Invention] As stated, this invention is very convenient in that there is no need for cable wiring to connect AV equipment and a telephone unit unlike in conventionally methods because signals are sent and received between AV equipment and a portable telephone. Furthermore, there is no worry for cross interference by signals between AV equipment and transmitter-receiver. At the same time, it is economically beneficial as there is no need to use a modem.

[Brief Description of the Drawings]

[Fig. 1] An overall view of one method of this invention.

[Fig. 2] An overall view of another method of this invention

[Fig. 3] A plane view of a portable telephone unit.

[Fig. 4] A plane view of a portable telephone unit to which a remote control transmitter-receiver is connected.

[Description of Reference Numbers]

1	AV equipment
2, 6	Reception part
3, 5	Transmission part
4	PHS telephone unit
7	Remote control transmitter-receiver
8	Cord
9	Button for operation
10	Base unit of the PHS telephone unit